

[Title of the Document] ABSTRACT

A control system which is capable of enhancing the accuracy of control, when the output of a controlled object is controlled with a control algorithm to which is applied a modulation algorithm based on one of a Δ modulation algorithm, a $\Delta \Sigma$ modulation algorithm, and a $\Sigma \Delta$ modulation algorithm, even if the absolute value of an input value to the modulation algorithm continues to be larger than 1 for a long time. The control system 1 for controlling the cam phase Cain of an intake cam 5 includes an ECU 2. The ECU 2 calculates a limited value deviation r_2 for control of the cam phase Cain by equations (1) to (10), modulates the limited value deviation r_2 with an algorithm expressed by equations (11) to (13) based on the $\Delta \Sigma$ modulation algorithm to thereby calculate a modulation output u'' as a predetermined value $\pm R$ ($R > |r_2|$), and calculates a control output V_{cain} to the electromagnetic variable cam phase mechanism 30 based on the predetermined value $\pm R$ (steps 5 and 6).